National Institute of Environmental Health Sciences

The association between climatic factors and childhood illnesses presented to hospital emergency among young children

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Abstract:

There has been an increasing concern about the effect of climatic change on human health in recent years. It has been suggested that young children are particularly at risk due to the reduced regulating mechanism against extreme climatic changes. However, few studies on the associations between climatic factors and childhood illness, specifically among young children, have been found in the literature. Ibis epidemiological study utilized data collected on all young patients aged less than 6 years who presented to an emergency department for a period of two years. Information on climate and outdoor air quality variables was obtained from the Bureau of Meteorology. Data were analysed with various ARIMA time series models for each common childhood illness. Results suggested that maximum daily temperature was a significant risk factor for fever (t Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 5.29, p < 0.001) with a regression coefficient of 0.37 (SE Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.07) and gastroenteritis (t Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 2.69, p Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.007) with a regression coefficient of 0.10 (SE Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.04). The UV index was also found to be significantly but negatively related to gastroenteritis (t Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) -2.37, p Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 0.018). However, none of the climatic variables were associated with respiratory problems after adjusting for other air quality variables and infectious disease.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Meteorological Factors, Precipitation, Solar Radiation, Temperature

Air Pollution: Ozone, Particulate Matter, Other Air Pollution

Air Pollution (other): NO2;SO2

Temperature: Fluctuations

Geographic Feature: ☑

resource focuses on specific type of geography

Urban

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Australasia

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Infectious Disease, Respiratory Effect, Other Health Impact

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease (other): gastroenteritis

Other Health Impact: fever

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Children

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified